



Features

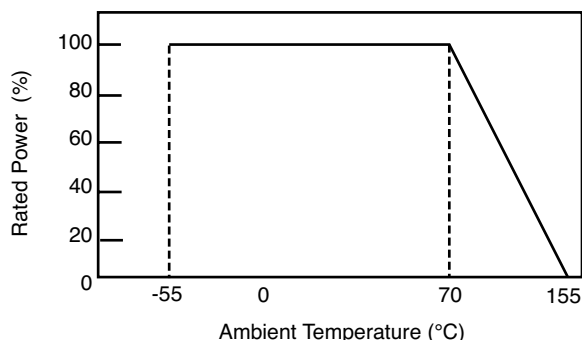
- Small package dimensions
- RoHS compliant*
- Power rating at 70 °C = 1/16 W
- Tight dimensional tolerances
- Three layer termination process with nickel barrier prevents leaching and provides excellent solderability
- Suitable for most types of soldering processes
- Standard packaging on paper tape and reel

CR0402 - Chip Resistor

Electrical Characteristics

Power Rating @ 70 °C1/16 W
 Operating Temperature Range
-55 °C to +155 °C
 Derated to 0 Load at.....+155 °C
 Maximum Working Voltage.....50 V
 Maximum Overload Voltage100 V
 Resistance Range
 1 %, E-96
 and E-24..... 10 ohms to 10 megohms
 5 %, E-24 1 ohm to 20 megohms
 Zero Ohm Jumper.....<0.05 ohms
 Temperature Coefficient
 1 % $10 \Omega \leq R \leq 1 \text{ M}\Omega \pm 100 \text{ ppm}/^\circ\text{C}$
 $1 \text{ M}\Omega < R \leq 10 \text{ M}\Omega \pm 200 \text{ ppm}/^\circ\text{C}$
 5 % $10 \Omega \leq R \leq 10 \text{ M}\Omega \pm 200 \text{ ppm}/^\circ\text{C}$
 $10 \text{ M}\Omega < R \leq 20 \text{ M}\Omega \pm 400 \text{ ppm}/^\circ\text{C}$
 $1 \Omega \leq R < 10 \Omega -200 \text{ to } +500 \text{ ppm}/^\circ\text{C}$
 AEC-Q200 Contact Bourns
 to confirm availability

Derating Curve



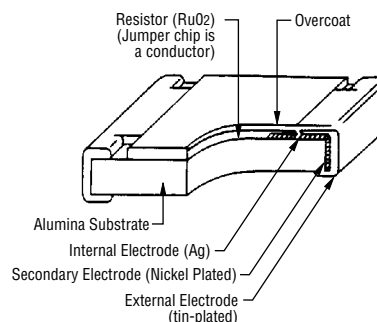
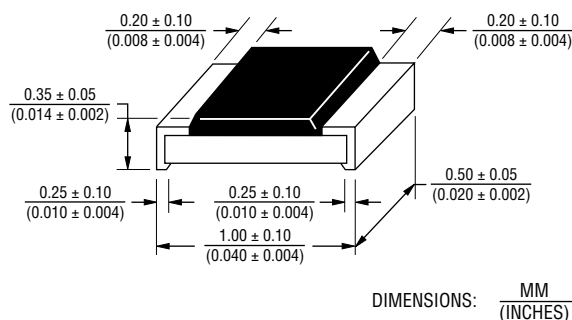
Standard Values

For Standard Values Used in Capacitors, Inductors, and Resistors, [click here](#).

Part Marking System

No Marking on the CR0402 Chip Resistors.

Dimensional Drawings



Performance Characteristics

Test	Procedure	Method	Test Limits ΔR	
			1 %	5 %
Thermal Shock	-55 °C for 30 minutes, +155 °C for 30 minutes, 5 cycles	IEC60115-1-4.19	$\leq \pm(0.5 \% + 0.05 \Omega)$	$\leq \pm(1 \% + 0.05 \Omega)$
Short Time Overload	2.5 X rated voltage for 5 seconds	IEC60115-1-4.13	$\leq \pm(2 \% + 0.1 \Omega)$	
Resistance to Solder Heat	270 $\pm$ 5 °C for 10 $\pm$ 1 seconds	IEC60115-1-4.18	$\leq \pm(0.5 \% + 0.05 \Omega)$	$\leq \pm(1 \% + 0.05 \Omega)$
Resistance to Dry Heat	125 $\pm$ 5 °C for 96 $\pm$ 4 hours	IEC60115-1-4.23.2	$\leq \pm(1 \% + 0.05 \Omega)$	$\leq \pm(2 \% + 0.1 \Omega)$
Load Life	Rated voltage for 1000 hours, 70 °C, 1.5 hours "ON", 0.5 hours "OFF"	IEC60115-1-4.25.1	$\leq \pm(3 \% + 0.1 \Omega)$	
Load Life with Humidity	Rated voltage for 1000 hours, 40 $\pm$ 2 °C, 90~95 % RH, 1.5 hours "ON", 0.5 hours "OFF"	IEC60115-1-4.24	$\leq \pm(3 \% + 0.1 \Omega)$	
Solderability	245 $\pm$ 5 °C, 2 $\pm$ 0.5 seconds	IEC60115-1-4.17	$\geq 95 \%$ of area covered	
Bending	3 mm	IEC60115-1-4.33	$\leq \pm(0.5 \% + 0.05 \Omega)$	$\leq \pm(1 \% + 0.05 \Omega)$
Dielectric Withstanding Voltage	--	IEC60115-1-4.7	>100 V	
Insulation Resistance	100 V	IEC60115-1-4.6	$\geq 1 \text{ G}\Omega$	

*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

Specifications are subject to change without notice.

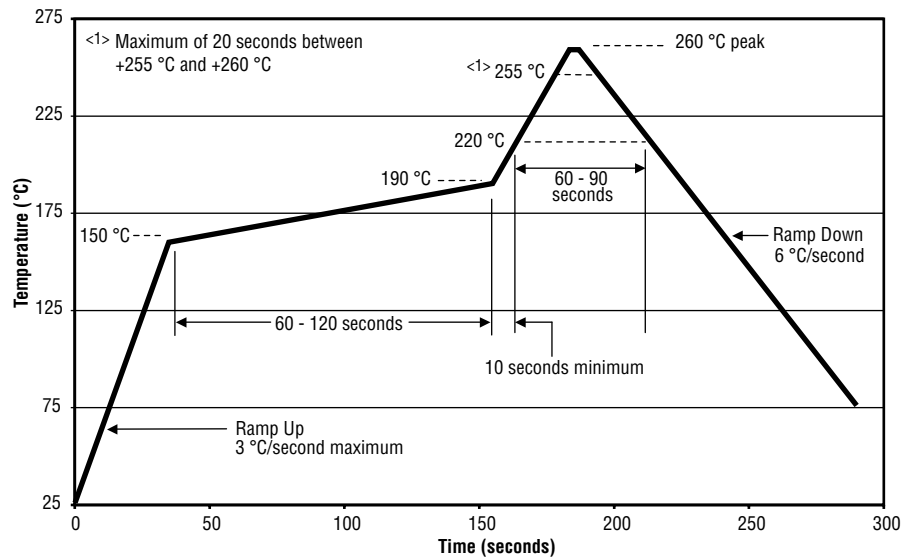
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.

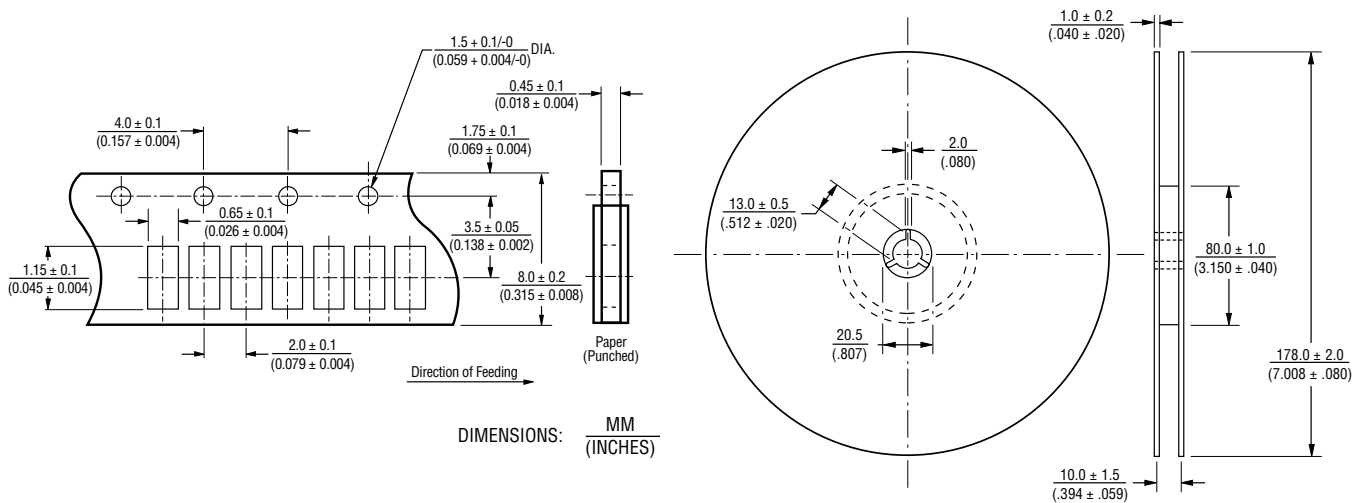
CR0402 - Chip Resistor

BOURNS®

Soldering Profile for RoHS Compliant Chip Resistors and Arrays



Packaging Dimensions (Conforms to EIA RS-481A)



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CR0402 - Chip Resistor

BOURNS®

How to Order

CR 0402 - F X - 8252 G LF

Model _____ (CR = Chip Resistor)					
Size _____ • 0402					
Resistance Tolerance _____ F = $\pm 1\%$ Used with "X" TCR code only for values from 10 ohms through 1 megohm; and Used with "W" TCR code only for values above 1 megohm. through 10 megohms. J = $\pm 5\%$ Used with "W" TCR code for values from 10 ohms through 10 megohms; Used with "Z" TCR code for values above 10 megohms through 20 megohms; Used with "/" TCR code for zero ohm (jumper); and for values from 1 ohm through 9.1 ohms.					
TCR (ppm/ $^{\circ}$ C) _____ X = ± 100 W = ± 200 Z = ± 400 / = -200 to +500					
Resistance Value _____ <u>For 1 % Tolerance:</u> <100 ohms "R" designates decimal point (example: 24R3 = 24.3 ohms) ≥ 100 ohms First three digits are significant, fourth digit represents number of zeros to follow (example: 8252 = 82.5k ohms). <u>For 5 % Tolerance:</u> <10 ohms "R" designates decimal point (example: 4R7 = 4.7 ohms) ≥ 10 ohms First two digits are significant, third digit represents number of zeros to follow (example: 474 = 470k ohms; 000 = Jumper).					
Packaging _____ G = Paper Tape (10,000 pcs.) on 7 " Plastic Reel					
Termination _____ LF = Tin-plated (RoHS compliant)					

REV. 11/16

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